REMARKS/ARGUMENTS

Claims 1, 21 and 29 have been amended to differentiate the adhesives which bond to low energy surface materials from the adhesives which do not bond to low surface energy materials which are described on page 13, lines 1-4 of the specification.

35 U.S.C. 102

Paragraphs 2 and 9 of the Advisory Action Mailed July 9, 2003

Claims 1-4 and 14-15 stand rejected as anticipated by Wood et al. for the reasons previously of record in Paper #8, Pages 8-9, Paragraph 16. This rejection is respectfully traversed for the following reasons.

Wood et al. do not disclose an adhesive which bonds to low energy surface material, and has a lap shear strength of about 4 MPa (about 600 psi), as required in amended Claim 1 Thus, Applicants submit that Claims 1-4 and 14-15 are not anticipated by Wood et al.

Paragraph 3 of the Advisory Action Mailed July 9, 2003

Claims 1-4 and 14-15 stand rejected under 35 U.S.C. 102 as anticipated by Straetz for the reasons previously of record in Paper #8, Pages 10-11 Paragraph 17. This rejection is respectfully traversed for the reasons previously of record in Paper #10 and for the following reasons.

Paper #10 is Applicants' reply to Paper #8. Paper #11 is the Office communication responsive to Paper #10. Paper #11, Page 7 Paragraph 15, last sentence states:

"Whether Straetz pretreated the surfaces of the tank before applying the adhesive is not germane to the claim because the claim only requires that adhesive bond to a low energy surface material, not that this is accomplished without the use of pretreatment methods."

The above rejection has been rendered moot by the amendment to Claim 1.

Since Straetz does not teach or suggest an adhesive which bonds to low energy surface materials and which do not require surface pretreatment of the low energy surface materials, Applicants submit that Claims 1-4 and 14-15 are not anticipated by Straetz.

35 U.S.C. 103

Paragraphs 4 and 10 of the Advisory Action Mailed July 9, 2003.

Claims 21-26 and 29 stand rejected over Wood et al for the reasons previously of record in Paper #8, Page 12-13 Paragraph 18. This rejection is respectfully traversed for the reasons previously of record in Paper #12 and for the following reasons.

Claims 21 and 29 have been amended by inserting at the end of each claim the limitation "which bonds to low energy surface materials, has a lap strength of about 4 MPa (about 600 psi) and which does not require surface pretreatment of the low energy surface materials." Since Wood et al. do not teach or suggest an adhesive which bonds to low energy surface materials and which has a lap strength of about 4MPa (about 600 psi), Applicants submit that Claims 21-26 and 29 are patentable over Wood et al. under 35 U.S.C.103.

Paragraphs 5, 6 and 11 of the Advisory Action Mailed July 9, 2003

Claims 5-13 stand rejected over Wood et al. or Straetz, in view of Zharov et al. or Skoultchi et al. for the reasons previously of record in Paper #8, Pages 13-14, Paragraph 19 and Pages 14-15, Paragraph 20. This rejection is respectfully traversed for the following reasons.

Claims 5-13 depend from amended Claim 1. If Claim 1 is found allowable, Claims 5-13 would also be found allowable.

Paragraphs 8 and 13 of the Advisory Action Mailed July 9, 2003

Page 8, Paragraph 13 states:

"*Chan et al. teaches that before or after joining the plastic component to the plastic fuel tank a barrier material is applied to the connection in order to have a continuous barrier layer (p. 15, paragraphs 156-161). Therefore, the powder of a*

barrier material bridges the gap between the barrier layers of the fuel tank and the plastic components." (Underlining added for emphasis.)

There is nothing in the description referred to (p. 15, paragraphs 156-161) which mentions anything about applying a barrier material to the connection. Paragraph 158 reads as follows:

"[0158] For making a fuel container component of a polyolefin (A) have barrier properties, the component is attached to the body of a fuel container, and then a powder of a barrier material (B) is, after having been melted, applied ***thereto****; or a powder of a barrier material (B) is, after having been melted, applied to the component, and then the thus-coated component is attached to the body of a fuel container. In the latter case, the component is preferably heat-sealed to the body of a fuel container. In one preferred embodiment for the case, the area except the heat-sealed portion is coated with the barrier material (B)."* (Underlining and bold face added for emphasis.)

In the above description, the word "thereto" refers to the component, and NOT to the connection, and the "heat-sealed portion" is the portion where the component is connected to the fuel tank ("the connection"). Thus, Applicants submit that Chan et al. do not teach that before or after joining the plastic component to the plastic fuel tank that a barrier material is applied to the connection in order to have a continuous barrier layer (p. 15, paragraphs 156-161) and, therefore, Chan et al. do NOT teach that the powder of a barrier material t bridges the gap between the barrier layers of the fuel tank and the plastic components.

Paragraph 13, Page 9, states:

"Chan [sic] et al. also teach that the fuel tank has openings formed in the tank for components to be added and that the barrier resin is added to the cutting face of the opening in order to seal the gap between the barrier layers of the fuel tank and the plastic component to provide a continuous barrier to fuel vapor emission from the joint between the fuel tank and the plastic components (p. 12, paragraph 131 and Fig. 2).

Claim 30 states:

"...the adhesive contacting the barrier layers of the plastic component and the plastic fuel tank and bridging the gap between the barrier layers of the fuel tank and the plastic components..."

Chan et al. do not disclose or suggest anything about an adhesive contacting the barrier layers of the plastic component and the plastic fuel tank. Instead, Chan et al. teach covering the cutting face of the tank opening with a barrier resin which then covers the exposed end of the polyolefin layer through which fuel from the tank escapes, because polyolefins are not resistant to fuel transmission. Fig. 2 does not show an adhesive contacting any barrier layer.

Since Chan et al. do not teach an adhesive contacting the barrier layers of the plastic component and the plastic fuel tank and that the adhesive bridges the gap between the barrier layers of the fuel tank, which is required in Claim 30, Chan et al. do not anticipate Claim 30. *Anticipation requires the presence in a single prior art reference of all elements of a claim arranged as in the claim. (Connell v. Sears, Roebuck & Co., 220 USPQ 193, 198 (Fed. Cir. 1983).*

Applicants submit that since Chan et al. do not anticipate Claim 30, Chan et al. is not a proper reference under 102(e) and, therefore, is not a proper 103 reference.

In view of the above, Applicants submit that Claim 30 is patentable over Wood et al. in view of Chan et al under 35 U.S. C. 103.

Respectfully submitted,

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PAGE 2 REPLACEMENT PARAGRAPH

In a first aspect, the present invention is a fuel tank comprising two or more pieces or sections and an adhesive layer interposed between two adjacent pieces or sections, the adhesive having a lap shear strength of about 4 MPa (about 600 psi) and bonds to low energy surface materials without surface pretreatment of the low energy surface materials.

PAGE 2 REPLACEMENT PARAGRAPH

In a first aspect, the present invention is a fuel tank comprising two or more pieces or sections ~~bonded together with an adhesive which bonds to low energy surface materials~~ and an adhesive layer interposed between two adjacent pieces or sections, the adhesive having a lap shear strength of about 4 MPa (about 600 psi) and bonds to low energy surface materials without surface pretreatment of the low energy surface materials.

PAGE 6 REPLACEMENT PARAGRAPH

The adhesives which can be employed in the practice of the present invention for bonding together two or more pieces to make a fuel tank include those adhesives which can support a load of 1334N or have a lap shear strength of about 4 MPa (megapascals), which is equivalent to about 600 pounds per square inch (psi), as determined by the Lap Shear Test. The Lap Shear Test is known and is described, for example, in U.S. Patents 6,613,816 and 6,239,250, incorporated herein by reference. The "1334N" value refers to a load when specimens are tested according to ASTM D1002 with a 322 mm^2 adhesively bonded area, except that HDPE is used as the substrate instead of the metal substrates.

PAGE 6 REPLACEMENT PARAGRAPH

The adhesives which can be employed in the practice of the present invention for bonding together two or more pieces to make a fuel tank include those adhesives which can support a load of 1334N or have a lap shear strength of about 4 MPa (megapascals), which is equivalent to about 600 pounds per square inch (psi), as determined by the Lap Shear Test. The Lap Shear Test is known and is described, for example, in U.S. Patents 6,613,816 and 6,239,250, incorporated herein by reference. The "1334N" value refers to a load when specimens are tested according to ASTM D1002 with a 322 mm^2 adhesively bonded area, except that HDPE is used as the substrate instead of the metal substrates.

COMPLETE LISTING OF CLAIMS

1. (Currently Amended) A fuel tank comprising two or more sections bonded together with an adhesive which bonds to low energy surface materials, has a lap shear strength of about 4 MPa (about 600 psi) and which does not require surface pretreatment of the low energy surface materials.

2. (Original) The fuel tank of Claim 1 which is made of a thermoplastic or thermosetting polymer.

3. (Original) The fuel tank of Claim 1 wherein the fuel tank is a mono layer low energy surface material or a multilayer structure comprising a core layer of a fuel barrier polymer and outer layers of a low energy surface material.

4. (Previously Amended) The fuel tank of Claim 3 wherein the low energy surface material is high density polyethylene and the fuel barrier polymer is selected from the group consisting of polyamides, fluoroelastomers, polyacetal homopolymers and copolymers, sulfonated and fluorinated high density polyethylene, ethylene vinyl alcohol polymers and copolymers, hydroxy-functionalized polyethers and polyesters, and branched polyesters.

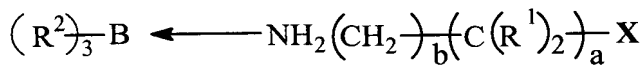
5. (Previously Amended) The fuel tank of Claim 1 wherein the adhesive supports a load of 1334 Newtons.

6. (Previously Amended) The fuel tank of Claim 1 wherein the adhesive has a fuel vapor permeation rate of not more than 46 g-mm/m^2/day.

7. (Original) The fuel tank of Claim 1 wherein the adhesive comprises an amine/organoborane complex.

8. (Original) The fuel tank of Claim 7 wherein the organoborane is a trialkyl borane or alkyl cycloalkyl borane and the amine is selected from the group consisting of (1) amines having an amidine structural component; (2) aliphatic heterocycles having at least one nitrogen in the heterocyclic ring wherein the heterocyclic compound may also contain one or more nitrogen atoms, oxygen atoms, sulfur atoms, or double bonds in the heterocycle; (3) primary amines which in addition have one or more hydrogen bond accepting groups wherein there are at least two carbon atoms, preferably at least three carbon atoms, between the primary amine and the hydrogen bond accepting group, such that due to inter- or intramolecular interactions within the complex the strength of the B-N bond is increased; and (4) conjugated imines.

9. (Previously Amended) The fuel tank of Claim 7 wherein the complex of the organoborane and the primary amine corresponds to the formula



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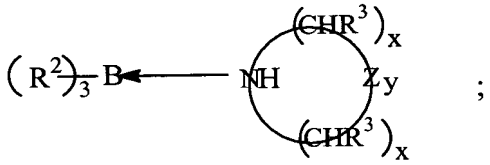
the organoborane heterocyclic amine complex corresponds to the formula



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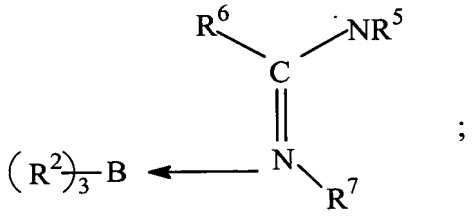
the organoborane amidine complex corresponds to the formula



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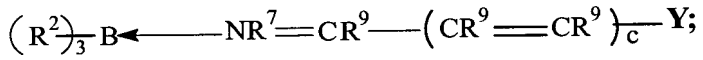
and the organoborane conjugated imine complex corresponds to the formula



wherein B is boron; R^1 is separately in each occurrence hydrogen, a C_{1-10} alkyl or C_{3-10} cycloalkyl; R^2 is separately in each occurrence a C_{1-10} alkyl, C_{3-10} cycloalkyl or two or more of R^2 may combine to form a cycloaliphatic ring structure; R^3 is separately in each occurrence hydrogen, a C_{1-10} alkyl or C_{3-10} cycloalkyl; R^4 is separately in each occurrence hydrogen, C_{1-10} alkyl, C_{3-10} cycloalkyl, C_{6-10} aryl or alkaryl; R^5 , R^6, and R^7 are separately in each occurrence hydrogen, C_{1-10} alkyl, C_{3-10} cycloalkyl, or two or more of R^5, R^6 and R^7 in any combination can combine to form a ring structure which can be a single ring or a multiple ring structure and the ring structure can include one or more of nitrogen, oxygen or unsaturation in the ring structure; R^9 is independently in each occurrence hydrogen, C_{1-10} alkyl or C_{3-10} cycloalkyl, Y, $-(C(R^9)_2-(CR^9=CR^9)_c-Y$ or two or more of R^9

can combine to form a ring structure, or one or more of R^9 can form a ring structure with Y provided the ring structure is conjugated with respect to the double bond of the imine nitrogen; X is a hydrogen-bond accepting group with the proviso that where the hydrogen bond accepting group is an amine it must be secondary or tertiary; Y is independently in each occurrence hydrogen, $N(R^4)_2$, OR^4, $C(O)OR^4$, a halogen or an alkylene group which forms a cyclic ring with R^7 or R^9; Z is separately in each occurrence oxygen or $-NR^4$; a is separately in each occurrence an integer of from 1 to 10; b is separately in each occurrence 0 or 1, with the proviso that the sum of a and b should be from 2 to 10; c is separately in each occurrence an integer of from 1 to 10; x is separately in each occurrence an integer of 1 to 10, with the proviso that the total of all occurrences of x is from 2 to 10; and y is separately in each occurrence 0 or 1.

10. (Original) The fuel tank of Claim 7 wherein the organo borane/amine complex comprises an aliphatic heterocylic amine which is a five or six membered heterocylic compound.

11. (Original) The fuel tank of Claim 7 wherein the organo borane compound of the complex has three ligands selected from C_{1-10} alkyl groups or phenyl groups, and the amine compound is selected from 1,6 diaminohexane, diethylamine, dibutylamine, diethylenetriamine, dipropylenediamine, 1,3 propylene diamine, and 1,2 propylene diamine.

12. (Original) The fuel tank of Claim 7 wherein the organoborane compound of the complex has three ligands attached to the borane atom and which are

selected from C_{1-10} alkyl groups and phenyl and the amine compound is an alkanol amine or a diamine wherein the first amine group is a primary or secondary amine and the second amine is a primary amine.

13. (Original) The fuel tank of Claim 7 wherein the amine compound of the complex is a polyoxyalkylene polyamine or a polyamine which is the reaction product of a diprimary amine and a compound having at least two groups which react with a primary amine.

14. (Original) The fuel tank of Claim 1 wherein the two or more parts are in the form of clam shells.

15. (Original) The fuel tank of Claim 14 wherein the clam shells are made of thermoplastic material and formed by extrusion blow molding, injection molding, thermoforming or compression molding.

16-20. (Withdrawn)

21. (Currently Amended) A fuel tank assembly comprising a fuel tank and fuel tank component(s) selected from the group consisting of a fill spud, vent valve, access cover, fuel line, fuel pump, fuel cut-off valve, fuel level gauge, clip, cam lock, fuel sender, roll-over valve, and heat shield joined to the fuel tank by means of an adhesive which bonds to low energy surface materials, has a lap shear strength of about 4 MPa (about 600 psi) and which does not require surface pretreatment of the low energy surface materials.

22. (Canceled)

23. (Original) The fuel tank assembly of Claim 21 wherein the fuel tank and fuel tank components are made of thermoplastic or thermosetting polymers or steel.

24. (Original) The fuel tank assembly of Claim 23 wherein the steel is stainless steel, pre-coated low-carbon steel, or post-coated low-carbon steel, and the thermoplastic or thermosetting polymer is polyoxymethylene, nylon, polyethylene, polyethyleneterephthalate, polytetrafluoroethylene, polyvinylidene fluoride, polyvinylidene chloride, ethylene vinyl alcohol or polypropylene.

25. (Original) The fuel tank assembly of Claim 23 wherein the fuel tank is co-extrusion blow-molded and the fuel tank components are joined to the external or internal surface of the fuel tank.

26. (Original) The fuel tank assembly of Claim 21 further comprising a primary seal applied at the joint between the fuel tank and the fuel tank component(s) and a redundant seal applied around the primary seal.

27. (Previously Amended) The fuel tank assembly of Claim 21 wherein the fuel tank and fuel tank components are coated with a vapor phase plasma coating.

28. (Original) The fuel tank assembly of Claim 27 wherein the plasma coating is applied on the internal or external surface of the fuel tank.

29. (Currently Amended) A fuel tank assembly comprising a plastic fuel tank having a wall with an outer surface and an inner surface, a single or multi-walled thermoplastic or metal component having a first

open end and a second open end, the first open end extending outwardly through an opening in the tank wall, and the second open end extending inwardly into the tank until it is in contact with the periphery of the tank wall opening and bonded thereto by an adhesive which bonds to low energy surface materials, has a lap shear strength of about 4 MPa (about 600 psi) and which does not require surface pretreatment of the low energy surface materials.

30. (Original) A fuel tank assembly comprising (1) a plastic fuel tank having a wall with an outwardly extending cylindrical opening and comprising a multilayer structure having inner and outer layers of low energy surface materials and a fuel barrier layer therebetween and (2) plastic component(s) attached or joined to the fuel tank wall along the periphery of the fuel tank wall opening by means of an adhesive having adequate structural strength, fuel resistance, sealing, and vapor emission properties, the plastic component comprising a multilayer structure having thermoplastic inner and outer layers and a fuel barrier layer therebetween, the adhesive contacting the barrier layers of the plastic component and the plastic fuel tank and bridging the gap between the barrier layers of the fuel tank and the plastic components to provide a continuous barrier to fuel vapor emission from the joint between the fuel tank and the plastic components.

31-38. (Withdrawn)

39-43. (Not entered)

44 (New Claim) A fuel tank comprising two or more pieces or sections and an adhesive layer interposed

between two adjacent pieces or sections, the adhesive having a lap shear strength of about 4 MPa (about 600 psi) and bonds to low energy surface materials without surface pretreatment of the low energy surface materials.

COMPLETE LISTING OF CLAIMS

1. (Currently Amended) A fuel tank comprising two or more sections bonded together with an adhesive which bonds to low energy surface materials, has a lap shear strength of about 4 MPa (about 600 psi) and which does not require surface pretreatment of the low energy surface materials.

2. (Original) The fuel tank of Claim 1 which is made of a thermoplastic or thermosetting polymer.

3. (Original) The fuel tank of Claim 1 wherein the fuel tank is a mono layer low energy surface material or a multilayer structure comprising a core layer of a fuel barrier polymer and outer layers of a low energy surface material.

4. (Previously Amended) The fuel tank of Claim 3 wherein the low energy surface material is high density polyethylene and the fuel barrier polymer is selected from the group consisting of polyamides, fluoroelastomers, polyacetal homopolymers and copolymers, sulfonated and fluorinated high density polyethylene, ethylene vinyl alcohol polymers and copolymers, hydroxy-functionalized polyethers and polyesters, and branched polyesters.

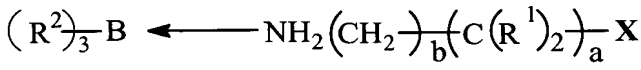
5. (Previously Amended) The fuel tank of Claim 1 wherein the adhesive supports a load of 1334 Newtons.

6. (Previously Amended) The fuel tank of Claim 1 wherein the adhesive has a fuel vapor permeation rate of not more than 46 g-mm/m^2/day.

7. (Original) The fuel tank of Claim 1 wherein the adhesive comprises an amine/organoborane complex.

8. (Original) The fuel tank of Claim 7 wherein the organoborane is a trialkyl borane or alkyl cycloalkyl borane and the amine is selected from the group consisting of (1) amines having an amidine structural component; (2) aliphatic heterocycles having at least one nitrogen in the heterocyclic ring wherein the heterocyclic compound may also contain one or more nitrogen atoms, oxygen atoms, sulfur atoms, or double bonds in the heterocycle; (3) primary amines which in addition have one or more hydrogen bond accepting groups wherein there are at least two carbon atoms, preferably at least three carbon atoms, between the primary amine and the hydrogen bond accepting group, such that due to inter- or intramolecular interactions within the complex the strength of the B-N bond is increased; and (4) conjugated imines.

9. (Previously Amended) The fuel tank of Claim 7 wherein the complex of the organoborane and the primary amine corresponds to the formula



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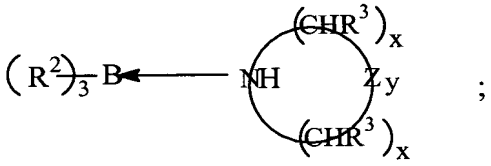
the organoborane heterocyclic amine complex corresponds to the formula



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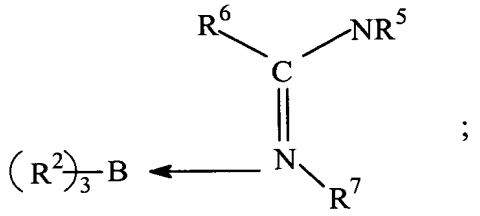
the organoborane amidine complex corresponds to the formula



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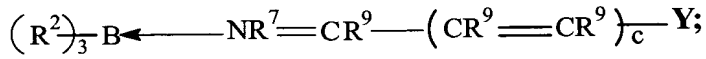
and the organoborane conjugated imine complex corresponds to the formula



wherein B is boron; R^1 is separately in each occurrence hydrogen, a C_{1-10} alkyl or C_{3-10} cycloalkyl; R^2 is separately in each occurrence a C_{1-10} alkyl, C_{3-10} cycloalkyl or two or more of R^2 may combine to form a cycloaliphatic ring structure; R^3 is separately in each occurrence hydrogen, a C_{1-10} alkyl or C_{3-10} cycloalkyl; R^4 is separately in each occurrence hydrogen, C_{1-10} alkyl, C_{3-10} cycloalkyl, C_{6-10} aryl or alkaryl; R^5 , R^6, and R^7 are separately in each occurrence hydrogen, C_{1-10} alkyl, C_{3-10} cycloalkyl, or two or more of R^5, R^6 and R^7 in any combination can combine to form a ring structure which can be a single ring or a multiple ring structure and the ring structure can include one or more of nitrogen, oxygen or unsaturation in the ring structure; R^9 is independently in each occurrence hydrogen, C_{1-10} alkyl or C_{3-10} cycloalkyl, Y, $-(C(R^9)_2-(CR^9=CR^9)_c-Y$ or two or more of R^9

can combine to form a ring structure, or one or more of R^9 can form a ring structure with Y provided the ring structure is conjugated with respect to the double bond of the imine nitrogen; X is a hydrogen-bond accepting group with the proviso that where the hydrogen bond accepting group is an amine it must be secondary or tertiary; Y is independently in each occurrence hydrogen, $N(R^4)_2$, OR^4, $C(O)OR^4$, a halogen or an alkylene group which forms a cyclic ring with R^7 or R^9; Z is separately in each occurrence oxygen or $-NR^4$; a is separately in each occurrence an integer of from 1 to 10; b is separately in each occurrence 0 or 1, with the proviso that the sum of a and b should be from 2 to 10; c is separately in each occurrence an integer of from 1 to 10; x is separately in each occurrence an integer of 1 to 10, with the proviso that the total of all occurrences of x is from 2 to 10; and y is separately in each occurrence 0 or 1.

10. (Original) The fuel tank of Claim 7 wherein the organo borane/amine complex comprises an aliphatic heterocylic amine which is a five or six membered heterocylic compound.

11. (Original) The fuel tank of Claim 7 wherein the organo borane compound of the complex has three ligands selected from C_{1-10} alkyl groups or phenyl groups, and the amine compound is selected from 1,6 diaminohexane, diethylamine, dibutylamine, diethylenetriamine, dipropylenediamine, 1,3 propylene diamine, and 1,2 propylene diamine.

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selected from C_{1-10} alkyl groups and phenyl and the amine compound is an alkanol amine or a diamine wherein the first amine group is a primary or secondary amine and the second amine is a primary amine.

13. (Original) The fuel tank of Claim 7 wherein the amine compound of the complex is a polyoxyalkylene polyamine or a polyamine which is the reaction product of a diprimary amine and a compound having at least two groups which react with a primary amine.

14. (Original) The fuel tank of Claim 1 wherein the two or more parts are in the form of clam shells.

15. (Original) The fuel tank of Claim 14 wherein the clam shells are made of thermoplastic material and formed by extrusion blow molding, injection molding, thermoforming or compression molding.

16-20. (Withdrawn)

21. (Currently Amended) A fuel tank assembly comprising a fuel tank and fuel tank component(s) selected from the group consisting of a fill spud, vent valve, access cover, fuel line, fuel pump, fuel cut-off valve, fuel level gauge, clip, cam lock, fuel sender, roll-over valve, and heat shield joined to the fuel tank by means of an adhesive which bonds to low energy surface materials, has a lap shear strength of about 4 MPa (about 600 psi) and which does not require surface pretreatment of the low energy surface materials.

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26. (Original) The fuel tank assembly of Claim 21 further comprising a primary seal applied at the joint between the fuel tank and the fuel tank component(s) and a redundant seal applied around the primary seal.

27. (Previously Amended) The fuel tank assembly of Claim 21 wherein the fuel tank and fuel tank components are coated with a vapor phase plasma coating.

28. (Original) The fuel tank assembly of Claim 27 wherein the plasma coating is applied on the internal or external surface of the fuel tank.

29. (Currently Amended) A fuel tank assembly comprising a plastic fuel tank having a wall with an outer surface and an inner surface, a single or multi-walled thermoplastic or metal component having a first

open end and a second open end, the first open end extending outwardly through an opening in the tank wall, and the second open end extending inwardly into the tank until it is in contact with the periphery of the tank wall opening and bonded thereto by an adhesive which bonds to low energy surface materials, has a lap shear strength of about 4 MPa (about 600 psi) and which does not require surface pretreatment of the low energy surface materials.

30. (Original) A fuel tank assembly comprising (1) a plastic fuel tank having a wall with an outwardly extending cylindrical opening and comprising a multilayer structure having inner and outer layers of low energy surface materials and a fuel barrier layer therebetween and (2) plastic component(s) attached or joined to the fuel tank wall along the periphery of the fuel tank wall opening by means of an adhesive having adequate structural strength, fuel resistance, sealing, and vapor emission properties, the plastic component comprising a multilayer structure having thermoplastic inner and outer layers and a fuel barrier layer therebetween, the adhesive contacting the barrier layers of the plastic component and the plastic fuel tank and bridging the gap between the barrier layers of the fuel tank and the plastic components to provide a continuous barrier to fuel vapor emission from the joint between the fuel tank and the plastic components.

31-38. (Withdrawn)

39-43. (Not entered)

44 (New Claim) A fuel tank comprising two or more pieces or sections and an adhesive layer interposed

between two adjacent pieces or sections, the adhesive having a lap shear strength of about 4 MPa (about 600 psi) and bonds to low energy surface materials without surface pretreatment of the low energy surface materials.